

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A method of growing a semiconductor layer structure, the method comprising the steps of:

growing a first (Al,Ga)N layer over a substrate at a first substrate temperature within the range 850°C to 1050°C by MBE using ammonia as the nitrogen precursor;

cooling the substrate to a second substrate temperature lower than the first substrate temperature within the range 650°C to 1000°C, while maintaining the supply of ammonia to the substrate;

growing an (In,Ga)N quantum well structure over the first (Al,Ga)N layer by MBE using ammonia as the nitrogen precursor;

heating the substrate to a third substrate temperature higher than the second substrate temperature within the range 850°C to 1050°C, while maintaining the supply of ammonia to the substrate; and

growing a second (Al,Ga)N layer over the quantum well structure at the third substrate temperature by MBE using ammonia as the nitrogen precursor, wherein the ratio of the supplied ammonia to supplied elemental metal is within the range 10:1 to 10,000:1.

2. (Original) A method as claimed in claim 1 wherein the first (Al,Ga)N layer has a first conductivity type.

3. (Original) A method as claimed in claim 2 wherein the second (Al,Ga)N layer has a second conductivity type different from the first conductivity type.

4. (Original) A method as claimed in claim 3 wherein the first (Al,Ga)N

layer is doped n-type and the second (Al,Ga)N layer is doped p-type.

5-10. (Cancelled)